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Amendments to the Claims:

Please cancel claims 1-44 without disclaimer or prejudice to applicants' right to pursue the subject matter of these claims in a future continuation or divisional application.

Please add new claims 45-76 as follows:

1-44. (Canceled)

45. (New) A quantification apparatus for detachably connecting a biosensor and quantifying a substrate included in a sample liquid supplied to the biosensor, said biosensor comprising:

a first insulating support and a second insulating support;

a specimen supply path for introducing the sample liquid including the substrate to be quantified, to an electrode part;

an electrode part comprising at least a working electrode, a counter electrode, and a detecting electrode as an electrode for confirming whether the sample liquid is drawn inside the specimen supply path; and

a reagent layer employed for quantifying the substrate included in the sample liquid;

where the electrode part, the specimen supply path, and the reagent layer are situated between the first insulating support and the second insulating support,

the specimen supply path being provided on the electrode part, and the reagent layer being provided on the electrode part in the specimen supply path, respectively, and

the electrode part being dividedly formed by a first type of slits provided on an electrical conductive layer which is formed on the whole or part of an internal surface of one or both of the first insulating support and the second insulating support;

where the quantification apparatus comprises:

a first current/voltage conversion circuit for converting a current from the detecting electrode included in the biosensor into a voltage;

a second current/voltage conversion circuit for converting a current from the working electrode included in the biosensor into a voltage;

an A/D conversion circuit for digitally converting the voltage from the first current/voltage conversion circuit and the second current/voltage conversion circuit;

a first selector switch for switching the connection of the detecting electrode of the biosensor to the first current/voltage conversion circuit or ground; and

a control part for controlling the A/D conversion circuit and the first selector switch; where the control part comprises:

applying a voltage between the detecting electrode and the counter electrode as well as between the working electrode and the counter electrode in a state where the first selector switch is connected to the first current/voltage conversion circuit;

detecting an electrical change between the detecting electrode and the working electrode as well as an electrical change between the working electrode and the counter electrode, respectively, occurring when the sample liquid is supplied to the reagent layer provided on the specimen supply path;

thereafter connecting the first selector switch to ground; and

measuring a current generated by applying a voltage between the working electrode and the counter electrode as well as between the working electrode and the detecting electrode.

46. (New) The quantification apparatus of Claim 45 comprising:

- a first current/voltage conversion circuit for converting a current from the detecting electrode included in the biosensor into a voltage;
- a second current/voltage conversion circuit for converting a current from the working electrode included in the biosensor into a voltage;
- an A/D conversion circuit including a first A/D conversion circuit for digitally converting the voltage from the first current/voltage conversion circuit, and a second A/D conversion circuit for digitally converting the voltage from the second current/voltage conversion circuit;
- a first selector switch for switching the connection of the detecting electrode of the biosensor to the first current/voltage conversion circuit or ground; and
- a control part for controlling the first A/D conversion circuit, the second A/D conversion circuit, and the first selector switch, where the control part comprises:
  - applying a voltage between the detecting electrode and the counter electrode as well as between the working electrode and the counter electrode in a state where the first selector switch is connected to the first current/voltage conversion circuit;
  - detecting an electrical change between the detecting electrode and the working electrode as well as an electrical change between the working electrode and the counter electrode, respectively, occurring when the sample liquid is supplied to the reagent layer which is provided on the specimen supply path;
  - thereafter connecting the first selector switch to ground; and
  - measuring a current generated by applying a voltage between the working electrode and the counter electrode as well as between the working electrode and the detecting electrode.

47. (New) The quantification apparatus of Claim 45, wherein the electrode part is provided on the whole or part of the internal surface of only the first insulating support of the biosensor, and the electrode part provided on the internal surface of the first insulating support is dividedly formed by the first type of slits provided on the electrical conductive layer.

48. (New) The quantification apparatus of Claim 45, wherein the counter electrode of the biosensor has an area that is equal to or larger than that of the working electrode of the biosensor.

49. (New) The quantification apparatus of Claim 45, wherein the counter electrode and the detecting electrode of the biosensor have a total area that is equal to or larger than that of the working electrode of the biosensor.

50. (New) The quantification apparatus of Claim 49, wherein the area of the detecting electrode in the specimen supply path of the biosensor is equal to the area of the counter electrode.

51. (New) The quantification apparatus of Claim 45, wherein the biosensor comprises a spacer that has a cutout part for forming the specimen supply path and is placed on the electrode part, and the second insulating support is placed on the spacer.

52. (New) The quantification apparatus of Claim 51, wherein the spacer and the second insulating support are integral.

53. (New) The quantification apparatus of Claim 45, wherein an air hole leading to the specimen supply path is formed in the biosensor.

54. (New) The quantification apparatus of Claim 45, wherein the reagent layer of the biosensor is formed by dripping a reagent, and the biosensor provides a second type of slits around a position where the reagent is dripped.

55. (New) The quantification apparatus of Claim 54, wherein the second type of slits is arc shaped.

56. (New) The quantification apparatus of Claim 45, wherein a third type of slits is provided for dividing the electrical conductive layer which is formed on one or both of the first insulating support and the second insulating support of the biosensor, to define an area of the electrode part of the biosensor.

57. (New) The quantification apparatus of Claim 56, wherein the first insulating support and the second insulating support of the biosensor are approximately rectangular in shape, and one of the third type of slits or two or more of the third type of slits are parallel to one side of the approximate rectangle shape.

58. (New) The quantification apparatus of Claim 45, which comprises information of correction data generated for each production lot of the biosensor, in accordance with characteristics concerning output of an electrical change resulting from a reaction between the sample liquid and the reagent layer, which can be discriminated by a measuring device employing the biosensor, where the biosensor provides one or a

plurality of a fourth type of slits dividing the electrode part, and the measuring device can discriminate the information of the correction data according to positions of the fourth type of slits.

59. (New) The quantification apparatus of Claim 45, wherein at least one or all of the slits provided in the biosensor are formed by processing the electrical conductive layer, which is formed on one or both of the first insulating support and the second insulating support of the biosensor, by a laser.

60. (New) The quantification apparatus of Claim 59, wherein the slits have a width between 0.005 mm to 0.3 mm.

61. (New) The quantification apparatus of Claim 60, wherein the slits have a depth equal to or larger than the thickness of the electrical conductive layer which is formed on one or both of the first insulating support and the second insulating support of the biosensor.

62. (New) The quantification apparatus of Claim 45, wherein the reagent layer of the biosensor comprises an enzyme.

63. (New) The quantification apparatus of Claim 45, wherein the reagent layer of the biosensor comprises an electron transfer agent.

64. (New) The quantification apparatus of Claim 45, wherein the reagent layer of the biosensor comprises a hydrophilic polymer.

65. (New) The quantification apparatus of Claim 45, wherein the insulating support of the biosensor is made of a resin material.

66. (New) The quantification apparatus of Claim 45 comprising:  
a second selector switch for switching the connection of the working electrode of the biosensor to the second current/voltage conversion circuit or ground; and  
the control part comprising:  
applying a voltage between the detecting electrode and the counter electrode as well as between the working electrode and the counter electrode in a state where the first selector switch is connected to the first current/voltage conversion circuit and the second selector switch is connected to the second current/voltage conversion circuit, respectively;  
connecting the second selector switch to ground when detecting an electrical change between the working electrode and the counter electrode, occurring when the sample liquid is supplied to the reagent layer of the biosensor which is provided on the specimen supply path; and  
thereafter when an electrical change is detected between the detecting electrode and the working electrode, measuring a current generated by applying a voltage between the working electrode and the counter electrode as well as between the working electrode and the detecting electrode, in a state where the second selector switch is connected to the second current/voltage conversion circuit and the first selector switch is connected to ground.

67. (New) The quantification apparatus of Claim 45 comprising an informing means for informing a user of a detecting result that no electrical change occurs between the detecting electrode and the working electrode as well as between the detecting electrode and the counter electrode, when the sample liquid is supplied to the reagent

layer of the specimen supply path, and the control part detects that an electrical change occurs between the working electrode and the counter electrode but no electrical change occurs between the detecting electrode and the working electrode as well as between the detecting electrode and the counter electrode.

68. (New) The quantification apparatus of Claim 45, wherein the electrical conductive layer which is formed on one or both of the first insulating support and the second insulating support of the biosensor comprises:

- a roughened surface forming step of roughening the surface of the insulating support by colliding an excited gas against the surface of the insulating support in a vacuum atmosphere; and

- an electrical conductive layer forming step of forming the electrical conductive layer as a thin film electrode which is composed of a conductive substance on the roughened surface of the insulating support, where the electrical conductive layer forming step is formed by a method comprising:

- a support placing step of placing an insulating support having an already roughened surface, which has been subjected to the roughened surface forming step, in a vacuum chamber;

- an evacuation step of evacuating the vacuum chamber; and

- a step of heating and evaporating a conductive substance to deposit steam of the conductive substance as a film on the insulating support having the already roughened surface.

69. (New) A thin film electrode forming method for forming a thin film electrode on a surface of an insulating support comprising:



a roughened surface forming step of roughening a surface of an insulating support by colliding an excited gas against the surface of the insulating support in a vacuum atmosphere; and

an electrical conductive layer forming step of forming the electrical conductive layer as a thin film electrode which comprises a conductive substance on the roughened surface of the insulating support, where the electrical conductive layer forming step comprises:

a support placing step of placing an insulating support having an already roughened surface, which has been subjected to the roughened surface forming step, in a vacuum chamber;

an evacuation step of evacuating the vacuum chamber; and

a step of heating and evaporating a conductive substance to deposit steam of the conductive substance as a film on the insulating support having the already roughened surface.

70. (New) The thin film electrode forming method of Claim 69, wherein the roughened surface forming step comprises:

a support placing step of placing the insulating support in a vacuum chamber;

an evacuation step of evacuating the vacuum chamber;

a gas filling step of filling up the vacuum chamber with a gas; and

a colliding step of exciting the gas to be ionized and colliding the same against the insulating support.

71. (New) The thin film electrode forming method of Claim 70, wherein the vacuum in the evacuation step is within a range of  $1 \times 10^{-1}$  to  $3 \times 10^{-3}$  pascals.

72. (New) The thin film electrode forming method of Claim 71, wherein the gas is a gas having no reactivity.

73. (New) The thin film electrode forming method of Claim 72, wherein the gas is either nitrogen or a rare gas selected from the group consisting of argon, neon, helium, krypton, and xenon.

74. (New) The thin film electrode forming method of Claim 69, wherein the vacuum in the evacuation step is within a range of  $1 \times 10^{-1}$  to  $3 \times 10^{-3}$  pascals.

75. (New) The thin film electrode forming method of Claim 69, wherein the conductive substance is a noble metal or carbon.

76. (New) The thin film electrode forming method of Claim 69, wherein the formed thin film electrode has a thickness within a range of 3 nm to 100 nm.